

Appl. No. 10/759,204
Amendment
Response to Office Action mailed February 1, 2008

RECEIVED
CENTRAL FAX CENTER

Docket No. NIT-407

AUG 01 2008

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Canceled)

2. (Currently Amended) ~~A computer executing a first program issuing an IO request to a storage apparatus and a second program receiving said IO request and transmitting said IO request as an IO command to said storage apparatus wherein:~~

~~—— a program identifier set in advance in said first program and an original request address of said IO request issued by said first program are applied to a first function which accepts the input of said program identifier and said original request address as two input values, and generates one value used as a new request address, which is different from said original request address and which is created by said program, wherein said new request address is a same size as said original request address, and wherein said IO request is issued using said new request address;~~

~~—— said second program has a table associating at least one said program identifier, at least one logical volume existing in said storage apparatus and at least one network address with each other; and~~ A computer coupled to a storage apparatus via a network, comprising:

an I/O processing unit which issues an I/O request to a storage apparatus;

Appl. No. 10/759,204

Docket No. NIT-407

Amendment

Response to Office Action mailed February 1, 2008

an I/O command issuing unit which is coupled to the network and which receives an I/O request from the I/O processing unit and transmits an I/O request to the storage apparatus via the network;

wherein:

the I/O processing unit inputs a predetermined program identifier and a request address, generates, with a first function, one value to be used as a new address including said program identifier, and issues an I/O request using the new address,

the I/O command issuing unit manages a table associating at least one said program identifier, at least one logical volume existing in said storage apparatus and at one least one network address with each other, if said IO request is an IO request issued to one said logical volume existing in said storage apparatus that is prescribed to be a protected logical volume, a second function which receives as one input value said new request address and generates, in an operation inverse to that of said first function, said original request address and said program identifier as two output values, said table is searched for said at least one network address associated with said generated program identifier and said at least one logical volume indicated by said generated original request address, and a communication with said storage apparatus is carried out by using said at least one network address as an address of a transmission originator in order to issue an IO command to said original request address using said original request address.

3. - 7. (Canceled)

Appl. No. 10/759,204
Amendment
Response to Office Action mailed February 1, 2008

Docket No. NIT-407

8. (Currently Amended) ~~A method of issuing an IO request to a storage apparatus from a computer over a network, comprising~~In a computer system including a computer and a storage apparatus coupled to the computer, a method of issuing an I/O request to the storage apparatus via the network, comprising the steps of:

setting, by the computer, a program identifier in advance in a first program executed on said computer;

applying, by the computer, ~~by said first program,~~ a first function to the program identifier as a first input value and a separate original request address obtained by said first program as a second input value to generate a new request address as an output value of the first function, wherein said new request address is different from said original request address, but of the same overall size;

issuing, by the computer, said IO request by said first program using said new request address in said IO request;

receiving, by the computer, said IO request by a second program running on said computer;

applying, by the computer, by said second program a second function to the new request address to derive said program identifier and said original request address; and

forwarding, by the computer, the IO request by said second program to said storage system using said original request address for the IO request, and using a network address associated with said program identifier as an originating address of said IO request, when

Appl. No. 10/759,204

Docket No. NIT-407

Amendment

Response to Office Action mailed February 1, 2008

said program identifier indicates that said first program is authorized to access a target of said IO request.

9. (Previously Presented) A method according to claim 8, further including steps of
- receiving said IO request by a network apparatus in said network, and
- determining by said network apparatus, on the basis of said network address associated with said program identifier used as the originating address of the IO request, whether or not communication with the target of said IO request in said storage system is permitted.
10. (Previously Presented) A method according to claim 8, further including steps of
- receiving said IO request by said storage system, and
- determining by said storage system, on the basis of said network address associated with said program identifier used as the originating address of the IO request, whether or not communication with the target of said IO request in said storage system is permitted.
11. (Canceled)